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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,202	06/09/2005	Chin Chang	US020504	1798
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EXAMINER				
ABDI, AMARA				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/538,202

**Applicant(s)**

CHANG, CHIN

**Examiner**

Amara Abdi

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 2, 9, 10 and 17-19 is/are rejected.  
7) ☒ Claim(s) 3-8, 11-16, and 20 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

#### **Remarks:**

2. Applicant's arguments with respect to claims 1, 9, and 17 have been considered but are moot in view of the new ground(s) of rejection: Mark W. et al. "Optimization of Sensor Response Functions for Colorimetry of Reflective and Emissive Objects", IEEE, vol. 5, No. 3, March 1996 and Quan et al. (US-PGPUB 2003/0138141).

Mark W. et al. teach the determining of detector spectral response (d) based on the tristimulus error (criteria function). The Mark W. et al. system is based on CIE L\*a\*b\* space over a standard ensemble of stimulus, where the device output is an estimate of the XYZ tristimulus vector t describing a surface. However, Mark W. et al. do not teach explicitly the RGB color system. It would have been obvious to one of ordinary skill in the art to convert the XYZ to an RGB system or vice versa. The Quan et al. teach the color matching function, where the standard space CIE XYZ values can be transformed to standard color space RGB values (paragraph [0021]).

#### **Claim Rejections - 35 USC § 101**

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-9 are rejected under 35 U.S.C 101 as not falling within one of the four statutory categories of the invention. Supreme Court precedent and recent Federal Circuit decisions indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example the method for determining RGB filter set including steps of constructing a criteria function, determining RGB filter set response, and determining color estimation parameters is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The Applicant has provided no explicit and deliberate definitions of constructing a criteria function, determining RGB filter set response, and determining color estimation parameters to limit the steps to the method for determining RGB filter set, " and the claim language itself is sufficiently broad to read on a SPE being shown a method for determining RGB filter set, mentally stepping through the §101 analysis, recalling In re Bilski.

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 9, 10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Mark W. et al. "Optimization of Sensor Response Functions for Colorimetry of Reflective and Emissive Objects", IEEE, vol. 5, No. 3, March 1996) in view of Quan et al. (US-PGPUB 2003/0138141).

**(1) Regarding claims 1, 9, and 17:**

Mark W. et al. teach a system for determining a color filter set and color performance for LED color sensing (see the Abstract), the method comprising:

constructing a criteria function ( $\Delta t$ ) describing an error between desired color matching functions (A) and a spectral response of a color filter set (F) (equation (2), page 508, right column, lines 22-40)

determining color filter set response characteristics (d) based on the criteria function (Fig. 3, page 508, right column, lines 23-24); and

determining color estimation parameters (tristimulus vector  $u$  and  $\Delta u$ ) for substantially optimal color estimation (page 512, left column, lines 20-42) with the color filter set based upon the determined color filter set response characteristics (page 509, left column, lines 1-25).

However, Mark W. et al. do not teach explicitly the RGB filter color system.

Quan et al., in analogous environment, teach a method and a computer readable medium (paragraph [0007], lines 1-2) for optimizing a selection of spectral sensitivities, where the standard space CIE XYZ values can be transformed to standard color space RGB values (paragraph [0021]), which can be used as a photocell plus filter layers (RGB filter) (paragraph [0023]).

It is desirable to produce a desired level of image quality. The Quan et al. approach, where the standard space CIE XYZ values can be transformed to standard color space RGB values is to achieve this goal. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to apply the Quan et al. teaching, by including the Quan's elements 34, 36, and 40 with the Mark W. et al. teaching, where standard space CIE XYZ values can be transformed to standard color space RGB values, which can be used as RGB filter, because such combination produces an imaging device with a desired level of image quality (paragraph [0009]).

**(2) Regarding claims 2 and 10:**

The combination Mark W. et al and Quan et al. teach the parental claims 1 and 9. Furthermore, Quan et al. teach the minimizing of the spectral difference (minimum value) between the color matching function and the RGB filter (Quan: paragraph [0023], lines 10-13).

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mark W. et al. and Quan et al. as applied to claim 17 above, and further in view of Schuurmans (USPGPUB 2003/0076056).

**(1) Regarding claim 18:**

The combination Mark W. et al and Quan et al. teach the parental claim 17. Furthermore, Mark W. et al teach the constructing of spectral approximation functions  $x$ ,  $y$ , and  $z$  (page 508, right column, lines 22-28) for the LED light sources (LED's to illuminate reflective surface) (Abstract, lines 5-6) from the  $M$  and  $N$  (matrix  $A$ ) determined by evaluating the criteria function (Fig. 3, page 508, right column, lines 15-40).

However, the combination Mark W. et al and Quan et al. do not teach explicitly the RGB LED light sources.

Schuurmans teaches the RGB LED light sources (paragraph [0027], lines 1-3).

It is desirable to have a system and method for controlling the RGB based LED luminary. The Schuurmans approach, where using the RGB LED light sources is to achieve this goal. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to apply the Schuurmans teaching, where using the RGB LED light sources, with the combination Mark W. et al and Quan et al., because such feature controls the RGB based LED luminary (paragraph [009], lines 1-3).

**(2) Regarding claim 19:**

The combination Mark W. et al and Quan et al. teach the parental claim 18. Furthermore, Mark W. et al. teach the means for determining estimated tristimulus values ( $u$ ) for the LED light sources based upon the spectral approximation functions (page 509, left column, lines 1-19).

However, the combination Mark W. et al and Quan et al. do not teach explicitly the RGB LED light sources.

Schuurmans teaches the RGB LED light sources (paragraph [0027], lines 1-3).

It is desirable to have a system and method for controlling the RGB based LED luminary. The Schuurmans approach, where using the RGB LED light sources is to achieve this goal. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to apply the Schuurmans teaching, where using the RGB LED light sources, with the combination Mark W. et al and Quan et al., because such feature controls the RGB based LED luminary (paragraph [009], lines 1-3).

**Allowable Subject Matter**

8. Claims 3-8, 11-16, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Contact Information:**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571)270-1670. The examiner can normally be reached on Monday through Friday 8:00 Am to 4:00 PM E.T..



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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